

# Pedagogies of Indeterminacy

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## Abstract

What might pedagogies of indeterminacy do? As researchers and educators, we ask that question, inspired by common worlds pedagogies, exploring pedagogies of indeterminacy. Drawing on pedagogical inquiries using charcoal and cardboard in an early childhood centre, we challenge early childhood narratives conformed by neoliberal-informed productivity models and choose to think with a pedagogy of indeterminacy. The larger concept of indeterminacy, for this work with charcoal and cardboard, encompasses working with boredom and contemplation to challenge dominant neoliberal constructs of productivity in early childhood education.

We begin by confronting the neoliberal-informed productivity concepts that continue to dominate practices in early childhood education. We then note three ways in which early childhood education conforms to these concepts. Then we trouble these three ways with the possibilities from indeterminacy, boredom, and contemplation.

What we propose with pedagogies of indeterminacy is an alternative narrative that challenges dominant productivity logics.

## Key words

pedagogy, common worlds, early childhood education, indeterminacy, boredom, contemplation

## Author Biographies

Adrienne de Castro is a Brazilian educator with years of experience working in elementary and secondary schools in Brazil. Her MA Thesis is inspired by common worlds pedagogies and thinking with, rather than mastering concepts, materials and others of shared worlds. She believes in an approach to early childhood education that is collectivist and inclusive of more-than-humans. Her research is a humble response toward more livable worlds in the present human-modified geological epoch of the Anthropocene.

Sarah Hennessy is a PhD Candidate in Curriculum Studies at Western University's Faculty of Education. With particular attention to early childhood education, she is curious about art (as artist, researcher and educator) and how creative expression informs understanding. Her research is focused on feminist new materialism and common worlds theoretical perspectives in search of alternative narratives, methods and pedagogies in education. Her approach to research is focused on openings to living well with others, more-than-humans and humans alike. With more than two decades of facilitating learning, she continues to explore the intersections of art, practice, ethical engagement, and place in considering childhoods differently.

## Pedagogies of Indeterminacy

*In a room absent of toys and furniture, charcoal moves. The children come into this area and observe the charcoal. They point, grab, and bring the charcoal to me. I accept the offer of the charcoal from the children and place the smaller pieces on paper. The charcoal breaks and falls recursively. With each interaction, the pieces diminish. The eyes shift focus to our hands, and we notice the dark dust, traces of our manipulation. Rubbing hands, the children watch to see what happens. Marks were made by charcoal, by us, together in relations. As a group, we have just accepted the invitation to slow down and focus with charcoal.*

We open this paper with notes from the first day of a pedagogical inquiry inspired by the scholarship within the Common Worlds Research Collective (<http://commonworlds.net/>). From September 2018 to April 2019, we participated as researchers in a Climate Action Childhood Network<sup>1</sup> research site in an early childhood centre in southern Ontario in a project titled *Witnessing Ruins of Progress*.<sup>2</sup> As pedagogists working in an international collaboratory, our collaborative ethnographic research focuses on alternative pedagogies to dominant discourses of child-centredness and developmentalism in early childhood. Our research works to open up possibilities in early childhood education.

In this specific inquiry, we involved young children in intensive engagements, first with charcoal, then with cardboard. First, researchers and educators worked to change the environment, moving furniture and removing materials in the childcare rooms to offer a space for children, educators, researchers, charcoal, and cardboard to be “deeply together.” To be deeply together with a material, in this context, is to be in a purposefully arranged space where children, educators, and researchers alike use common worlds methods to consider alternative ways to interact and to be together. Common worlds methods embed researchers in the process and focus on slowing down to attune with the sensorial and affective aspects

and the histories of entangled relations (Hodgins, 2019).

The changed classroom space invited a slowed pace and experimentation with the material. That was our first move in engaging with unpredictable possibilities, interruptions, and new thinkings that the charcoal and cardboard encounters provoked. Indeterminacy, or not knowing in advance, allows for an infinite number of solutions toward multiple ends. Desiring to open up dominant early childhood narratives that sanitize education toward specific productivity goals, we ask: What might pedagogies of indeterminacy contribute to alternative understandings of early childhood education? We consider a pedagogy of indeterminacy as an alternative to dominant discourses rather than a replacement.

We think with indeterminacy in our research because it brings the possibilities that lie in not knowing or establishing a priori everything that is there for a child to learn or to know. In indeterminacy, relations are always moving and cannot be pre-determined. We embrace these tensions through pedagogies of indeterminacy. When we embrace indeterminacy in research, the focus of the experimentation becomes an “unknown potentiality and change” (Lenz Taguchi, 2010, p. 16). Indeterminacy happens within the tension of being in the middle, in the tensioned balance of not moving toward edges—toward binary thinking. In our immersive encounters with charcoal and cardboard, we think with Karen Barad (2007) and her concepts of indeterminacy. She posits that:

if the indeterminate nature of existence by its very nature teeters on the cusp of stability and instability, of determinacy and indeterminacy, of possibility and impossibility, then the dynamic relationality between continuity and discontinuity is crucial to the open-ended becoming of the world which resists acausality as much as determinism. (p. 182)

We connect Barad’s thinking on indeterminacy to the open-ended possibilities of the dynamic relationalities of entanglements within common worlds (Taylor, 2018). This paper goes beyond stating examples of material engagements with charcoal and cardboard by purposefully engaging, from the outset, with the challenges and possibilities of indeterminacy.

<sup>1</sup> This paper is part of an ongoing federally funded study with Climate Action Childhood Network (<http://www.climateactionchildhood.net/>), an international collaborative partnership created by the Common Worlds Research Collective (<http://witnessingruinsprogress.climateactionchildhood.net/>). The research is focused on young children, education, and challenges related to climate change.

<sup>2</sup> See <http://witnessingruinsprogress.climateactionchildhood.net/>.

In challenging dominant constructs of productivity in early childhood education, the concept of indeterminacy encompasses thinking with boredom and with contemplation in this work with charcoal and cardboard. We discuss how indeterminacy can present moments of boredom and contemplation in early childhood education. Boredom and contemplation are enactments away from predetermined structures toward other possibilities of engaging with the world, as an alternative to neoliberal productivity models of practice. As researchers and educators, we find boredom, contemplation, and indeterminacy to be integral parts of material relations because relations require attention, pauses, and engagement with what is known and not yet known.

We begin this paper by confronting the neoliberalism-informed productivity concepts that dominate practices in early childhood education. From here we note three ways in which early childhood education conforms to neoliberal productivity logics in relation to skills, spaces, and time. We continue by troubling these ways with possibilities that arise from indeterminacy—uncertainty, boredom, and contemplation. The next section focuses on a common-worlds-informed pedagogy of indeterminacy. Using field notes from our inquiries with charcoal and cardboard, we outline how pedagogies of indeterminacy become generative and meaningful. Our field notes are a blend of observations and reflections provoked by these observations. We worked with the educators, sharing observations, photos, and reflections following each day of the engagements. That practice of going back created responses and questions that would lead to various ways of continuing the engagements. In these shared observations with educators, we practiced the art of slowing down by proposing that we pay attention to children's responses, actively engage with their curiosity about charcoal or cardboard, and stay with the difficulty of being with the materials. The paper concludes by highlighting the vitality of a pedagogy of indeterminacy in early childhood education.

## Neoliberalism's Impact on Early Childhood Education

Neoliberalism, the term that currently dominates global economics and influences governments and institutions toward hyper-focused efficiency and individualization models (Higgins & Larner, 2017), profoundly influences education through dominant models of neoliberal productivity. The combined focus on productivity, efficiency, and the individual contributes to the centring habits of early childhood education, including child-

centred, teacher-centred, skills-centred, curriculum-centred, and school-preparedness-centred habits. Through these habits, education, which is grounded in a human-centred science model of superiority, sanitizes channels education toward a single goal of neoliberal productivity by excluding possibilities beyond such productivity. De-centring the human dismantles hierarchical framings that place all other matter below humans. In a common worlds framework, de-centring the human in early childhood practice disrupts a cultural predisposition toward human supremacy and the "western, individualistic, normativising" (Ritchie, 2016, p. 78) tendency of the neoliberal era (Plumwood, 1993; Smith, Tuck, & Yang, 2018; Taylor, 2017).

An impact of neoliberal byproducts of productivity and hyperindividualism in early childhood education is a focus on preparing increasingly younger children for efficient learning of preset curricula for success in the competitive market of education—success required for future employability and earning power (Dahlberg & Moss, 2004). The productivity focus of neoliberal discourse creates a space where having no set goal or model to follow is perceived as fruitless, unprofessional, and wholly negative. Defaulting to a neoliberal model where education is a means to an end for individual and corporate prosperity creates an inflexible model in which there is no place for indeterminacy, boredom, or contemplation.

## Disrupting Productivity Discourses in Early Childhood Education

The free-market influence of neoliberalism informs both the curriculum and the business of early childhood education in much of Canada (Halfon & Langford, 2015). Ontario's early childhood curriculum *How Does Learning Happen?* (Ontario Ministry of Education, 2014) is infused with productivity language that positions early childhood education as a means of producing outputs toward a "stronger future" (p. 4). While *How Does Learning Happen?* is a more open document than its predecessors, its productivity language sets a frenetic pace for educators who need to aim at "getting to be better and better as teachers all the time" (p. 13), an implication that influences practice.

In this paper, we note three ways in which neoliberalism-informed productivity discourses influence early childhood education in Ontario. The first productivity influence is a focus on skills specific to school readiness and success. These skills are efficiently laid out within a continuum of development. While explicitly described

as not a “lock-step, universal pattern” (Ontario Ministry of Education, 2014, p. 1) the implicit orientation, in chart form, is nevertheless used as a tool to measure the efficient movement of children through the psychology-laden developmental continuum (Johnston, 2019). The second influence is the constant need for novelty. Within understandings of the spaces of early childhood practice (like classrooms and playgrounds), novelty informs a conceptual tone in which the new is seen as necessary because of its role in generating dopamine and neural pathways. In productivity-informed ECE, this becomes pressure for educators to constantly infuse spaces with the new (Rushton, Juola-Rushton, & Larkin, 2010). The third influence is the unyielding structure of time-based schedules. The practice of early childhood education carries the language of time as part of both longer trajectories aimed at school success and short-term skill acquisition driven by an infinite preparedness for “next year, next grade” mentality. Similar to limiting understanding of time as linear, time in early childhood is also commodified. In the productivity model in the neoliberal context, the time to care for young children “cannot be traded, and thus [is] not recognized” (Farquhar, 2016). Time, dictated by the ever-present class clock, infuses and constrains dialogues, engagements, behaviours, and experiences and divides them into set segments, acting as the ultimate resource.

### **The Possibilities Arising from Indeterminacy, Boredom, and Contemplation**

With indeterminacy, we actively challenge productivity discourses. We acknowledge that each decision within a pedagogical encounter carries multiple possibilities. Possibilities may not connect ideas, relations, and materials in linear ways but rather create a complex network of these things. Indeterminacy encompasses the instabilities of the unexpected; the instability of not knowing is a tensioned place. Sitting with tension can be perceived as boredom—an undesirable effect of those instabilities in a neoliberal productivity model. Boredom worked as a feared and undesirable possibility in our charcoal and cardboard encounters, and that possibility created tensions. The tensioned nature of boredom in early childhood education works as an alternative to the need for constant novelty. Instead, boredom gives place for sustained moments of inquiry that can open to creating relationships. Because developing relationships takes time, building them is an inherently inefficient process within a neoliberal productivity mandate.

During sustained encounters with materiality, ideas, and

places, there are moments of pause, of doing nothing, and of contemplation. Contemplation is generally attributed to humans and positioned as an individual endeavour. We see contemplation as more than the prolonged gaze of the individual consuming an image. For us, in this research, contemplation was a collective experience found in relations with others, both human and material. To contemplate is to create attunement (Stewart, 2011), a point of entry for thinking with unusual subjects of contemplation, such as pieces of charcoal or cardboard. Contemplating produced a pause that allowed us to attend to charcoal or cardboard and to respond “to something not quite already given and yet somehow happening” (Stewart, 2007, p. 127)—that is, it allowed us to respond to the indeterminate nature of the encounters. Contemplation was foundational to how we, as researchers, collaborated on field notes and brought the contemplative nudges from our thinking, not just the clinical nature of observation, to our field notes. The possibilities that arose from pauses that agitated in contemplation were troubling and forced us to face behaviours, policies, and centering habits that pressure educators to look for evidence to send home or hang on the wall. Undercurrents in ECE that create educator behaviours toward active doing, making, or producing by children as evidence for parents, administrators, and inspectors have the effect of sidelining contemplation.

Such moments of pause and indeterminacy open space for wondering “What will happen?”—a question deemed inefficient in a logic of school readiness. Early childhood spaces orchestrated with a rat race of “What’s next, what’s new?” of experience interrupts the possibilities that come from boredom and contemplation. In pedagogies of indeterminacy, we pause to disrupt the dictatorship of the classroom clock to make space for other kinds of time that privilege slowing down to build relationships.

### **Thinking Indeterminacy With Common Worlds**

We propose pedagogies of indeterminacy within the context of common worlds pedagogies. A common worlds framework embraces childhood “as made and lived through entangled sets of noninnocent human and more-than-human relations indebted to the maxim of situated knowledges” (Taylor, 2018, p. 207). Common worlds methods attend to the presence of more-than-human worlds (materials, places, and other species) with pedagogies that attune to the challenges of the new geologic epoch of human-induced precarity: the Anthropocene (Stengers, 2015). Climate change models remain embedded within stewardship models (Taylor,

2017) that position nature as something only humans can save and protect. While children's engagement with climate change is growing across the spectrum of early childhood education, common worlds pedagogies support alternate directions, beyond human-centred stewardship, that are grounded in understanding of and emerging relations with a more-than-human world. Common worlds pedagogies continuously question child-centric and solely developmental doings in early childhood education. In continuously questioning, we consider how child-centred developmental practices reinforce individualist and humancentric positions in this geologic era (Taylor, 2013, 2017; Taylor & Pacini-Ketchabaw, 2015).

Thinking with common worlds moves away from the individual child to a collective lens of thinking with children. Through a collective disposition that involves educators and children learning with the worlds in which they are already entangled, we stop following individual children and pursue openings to relations with more-than-human others. In our collective spaces with charcoal and cardboard, we considered relations with many. While some of the many included children, curricula, discourses, and materials, the approach lies with uncentred entanglements. Common worlding interrupts language that references "the world around us," as *How Does Learning Happen?* (Ontario Ministry of Education, 2014, p. 5) does with references to shared common worlds where humans are interconnected with multiple more-than-human worlds. This perspective moves us toward alternative ways to experience shared spaces with others, living and non-living, human and more-than-human. The move from thinking about the world to thinking with the world is integral to this shift toward collective thinking. The idea of connectedness moves us to think with and become our enmeshed relations because we are not thinking with isolated parts or individual actions. It is an attempt to become worldly (Taylor, 2013) as we focus on shared worlds and connections with materials, energies, and species beyond self and beyond human.

In moving toward collective thinking while engaging with charcoal and cardboard, ways of relating with materials and children are transformed. Rather than separate identities of human or material, the focus becomes what happens with interactions between them. We led the inquiry with questions such as: What kinds of pedagogical responses might charcoal and cardboard enact? How might these responses disrupt child-centred, content-centred, and material-centred practices in early childhood? In other words, the inquiry focused on the relations these materials evoked and on the space of intra-actions (Barad, 2007).

By intra-activity, we mean that more than interaction takes place in the encounters: participants affect and are affected by others (Barad, 2007; Davies, 2014; Lenz Taguchi, 2010).

Engaging with pedagogies of indeterminacy, we recognize the messy nature of relations and we build on those ideas of entanglement and connectedness. As Barad (2007) writes, "indeterminacy reconfigures the possibilities and impossibilities of worlds becoming" (p. 225). As we create an opening for these encounters within common worlds, we foreground ways to build relationships with the unknown (Rooney, 2019, p. 187).

### **Pedagogies of Indeterminacy**

In our inquiry, alternative modes of response were found with charcoal and cardboard engagements that opened possibilities for indeterminacy and interrupted productivity and consumption-driven behaviours. In facing the possibilities and impossibilities (tensions), we intentionally searched within our worldly encounters for "alternative modes of response to the challenges ahead; ways that are slower, less linear and open to the unexpected" (Rooney, 2019, p. 187).

The following are excerpts from our field notes. The first incident took place during engagements with charcoal, where we immersed ourselves in a space with charcoal and large pieces of paper on the floor and walls of the room. The second excerpt is from our cardboard engagements, where various cardboard pieces filled the room. With both materials, children, educators, and ideas were in relation, working to disrupt the need for a singular focus (on a child, material, or learning moment). The intensive charcoal and cardboard engagements intentionally included an openness to the unexpected. The excerpts are positioned as invitations to readers to consider the possibilities inherent in contemplation and boredom. In other words, we enact pedagogies of indeterminacy.

*We wonder about time.... We live fast-paced lives instilled early on to talk fast, move on, check in, but something keeps happening during these intra-actions that moves us into a different time zone where a minute can become an hour. During the charcoal encounters, we lose track of time. We can't remember what else was happening or who else was there. We feel caught trying to remember when it happened—before or after the walk? All we can remember is an intensity—a distinct squeaking sound. It is less disturbing than scratching a chalkboard, but it makes the inner ear twitch and cringe at thoughts of the dentist's chair.*

*The sound is soothing and flows out with pressure and movement together. You can hear it, really hear it. It is intimate. You have to lean in close to feel the sound. Leaning in to listen, you can taste the metallic dust on your lips. Foreheads together, we listen with the children. It is a tiny metal note twanging along the paper from the charcoal to the ear. But it isn't just through the ears that it moves. It communicates in another way, coursing vibrationally inside. It feels like these invisible vibrations make organs quiver. It feels cold and primal and unbalances the intellect. Are we hearing it or feeling it? It is a new experience and a telegraph line to very old feelings.*

Over the course of a month, charcoal entanglements became entanglements with cardboard. As charcoal and paper encounters accumulated, the centre was faced with growing amounts of paper. This situation prompted dialogue on blue recycling bins and the false sense of relief recycling provides. It fostered dialogue on how pervasive certain other materials can be without being present or acknowledged. This material, for us, was cardboard.

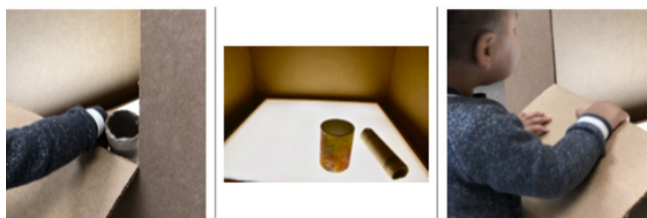


Figure 1: Contemplative engagements with cardboard

*A big box covers the light table today. The educator is curious about the possibilities of light and cardboard. She turns on the light table and tries it for herself. The result is not quite what she had in mind as there are no shadows because the light comes from the bottom. Later in the morning, a child, Clara (pseudonym), thinks differently, noticing the big window recently made in the large box. She takes a peek and sees the light table inside and keeps observing for a while, opening and closing the “window” and looking inside repeatedly. She decides to continue her inquiry, adding cardboard tubes. She puts the tubes through the window, and they fall between the cardboard box and the light table. Clara tries to get them back with my help. She throws the tubes inside again and again, until they fall over the light table.*

*She stops, smiles, and observes. Clara goes back to the first movements: opening and closing the window and watching the pieces that are over the light table. We look at it to see what she seems so contemplative about, and when staring at the object, we see how beautiful the light makes the pieces of cardboard look. We cannot be sure what Clara*

*thought about the image, but we agreed with her that it was definitely worth contemplating.*

Moments of intimately hearing together and wondering about beauty are moments of indeterminacy. Thinking with materials like cardboard and charcoal in sustained moments can invoke tension for educators because it disrupts neoliberalism-informed productivity of early childhood education. In a pedagogy of indeterminacy, staying with the chosen materials in moments of boredom makes room for wonder about the beauty of light and material together. It becomes an alternative to the presumed constant need for novelty.

The immersive engagements with charcoal or cardboard, children, educators, and researchers during our encounters were provocative and generative. The purposeful disruption of the childcare environment generated encounters full of thoughts, connections, and dialogues. When a space for experimentation is opened, Pacini-Ketchabaw, Kind, and Kocher (2016) suggest that:

*we engage with children, materials, narratives, and situations as they act on and act with each other... It is not just human relationality. It is about the capacity for things and beings to respond to each other in space, in and out of time, in movement, in an environment that allows for multiple convergences and intersections. (p. 41)*

In charcoal spaces of relational engagements, our focus was not on the charcoal as an art material, its potential uses, or children's capacities with it. Our charcoal times were moments of intra-activity (Barad, 2007)—the in-between of charcoal, children, adults, materials, and more. In this intra-active approach, Hillevi Lenz-Taguchi (2010) writes, “when we think in terms of the material being just as agentic as humans, we are not locked into either-or thinking, nor into a thinking of both-and” (p. 29). Lenz Taguchi reminds us that such thinking allows us to go beyond binary divisions of theory/practice, nature/culture, or discursive/material toward a plethora of in-between thinking. Our choice of charcoal was intentional, with the material bringing its origins and relations into the room.

The charcoal came from a living tree—it was burned, processed, and transported before being purchased and used. When it joined all of us in the childcare centre, it continued a complex relation with humans and materials. The charcoal relates directly to the forest where the children frequently walk with their educators. It was never simply charcoal but rather a complex, entangled history

and process fraught with politics, behaviours, energies, needs, movements, and more. The charcoal as a material in the inquiry was not a simple, determinate material. Charcoal brought indeterminacy when we considered the complex relations of its becoming.



Figure 2: Cardboard bark?

*We visited the forest with cardboard and children. In the forest we stopped at a favourite fallen trunk and spent time observing the surface of the trunk, noting holes, lines, and texture and pausing to take our mitts off to carefully feel this surface.*

*A piece of bark, separated from the decaying branch, came into focus. With the children, we considered both: cardboard and bark, turning them over in our hands and smelling them. We rubbed them both on our cheeks. We placed them on the ground and observed them together.*

Like charcoal, cardboard carries stories. Cardboard boxes, tubes, and packaging are ubiquitous in Ontario lives. Cardboard in its many forms carries stories of movement, contents, transportation, and consumption. Much of the cardboard brought into the classroom was already part of educator-children-parent stories such as the new widescreen television carried home through snow for Christmas. That one cardboard story was present and participated in the entanglement.

Just like this cardboard story participated in the entanglement, so too did cardboard participate with forest. The ridged texture of cardboard met bark on the forest floor, furthering stories with cardboard. In being with charcoal and cardboard, we thought with Affrica Taylor (2013), who describes the “dynamic collectives of humans and more-than-humans, full of unexpected partnerships and comings together, *which bring differences to bear on the ways our lives are constituted and lived*” (p. 49, italics in original).

The indeterminacy of the charcoal encounter makes it complex, relational, and situated. In recognizing temporalities, intra-actions, and material relations, humans become less central. Charcoal’s past states and its

journey from tree through fire to commodity and human use are part of a complex relationality, well imbricated with humans, spaces, and uses. The awareness of that inseparability interrupts tendencies toward individuality in favour of collective partnerships with cardboard and charcoal. Charcoal experiences were approached as a collective undertaking not centred around an individual child or humans but focused instead on the togetherness of adults, children, and materials. In clearing the room of other materials, this complex and collective relationality was underlined. The importance of materials, as participants, is foregrounded with the simplicity of being in relations with a single material. These material relations, like connections of texture between the cardboard and bark, or stories about the widescreen box, become members (Latour, 1993) of the classroom. Charcoal too is a member of the classroom and participates in multiple relations. Charcoal, as participant, is impossible to marginalize when the space is emptied of other materials.

Foregrounding charcoal in an immersive experience is not enough to diminish child-centring behavior. Proactively following charcoal (as participant) and its relations combined with the immersive environment in our inquiry to dissipate child-centring habits. The tendency with de-centring is to replace an outgoing activity centre with a new centre. We wrestled with the tension of filling the vacuum at the centre. With charcoal, and then with cardboard, we interrupted child-centred behaviour with a collective interconnectedness without a centre. We were able to think collectively with materials, discourses, and others when we interrupted tendencies to replace one centre with another. We did this by troubling the tendency to think in child-centred, material-centred, or productivity-centred ways. Our thinking became about the overlapping of multiple participants, connections, and boundaries. By interrupting a singular focus on children or explicit learning with charcoal and cardboard, it was possible to attune to connections among the many in the tangled collective.

### Tensions With Boredom

The provocations of being with a single material created tensions for and with educators and parents circling around issues of boredom. In removing much of the material stimulants in the space, questions arose, such as “What will the children do and play with?” Boredom was a great concern even before we started. In stripping the childcare room down to four walls, furniture, paper, and charcoal, comments arose, such as “They will get bored”

and “Parents are going to ask us what they’re learning with just charcoal.” As a team of researchers and educators, we wondered aloud with charcoal, cardboard, and each other. From children came raised eyebrows; deep, close, silent leans toward materials; and blank stares. In developing a new relation there was an air of indeterminacy and the unknowns of building relations. Instead of attempting to erase the blank stare educators and researchers purposefully revisited, leaned in further, and contemplated fascinations with, not about, cardboard and charcoal. We pushed neoliberal mindsets that position boredom as unproductive, negative, and unwelcome to the background and sat with the tension of blank stares. Within the tension of the blank stares, we fell away from temporal constraints as we tasted, felt, and moved intimately in a tangle beyond the human. It was in sitting on the floor with charcoal and little else that boredom became a “distinct squeaking sound” (field notes). The vibrational closeness and the curiosity stimulus caused us, as researchers, to consider “something beyond the boundaries of human existence” (Carson & Kelsh, 1998, p. 54) in relations with charcoal. Faced with boredom and the fear of boredom, educators did not look away but instead confronted the systems, discourses, and professional training that narrate stories of boredom as unproductive. With the educators we stopped and recognized these stories for what they are—a political power deployment of a bully we can stand up to and interrogate. What kind of story are we interrupting when we sit with boredom? What knowledge are we foregrounding with tensioned boredom? Sitting with the tension of boredom is a political act of resistance against a neoliberal dominant discourse (Dahlberg, Moss, & Pence, 2013).

The possibility of boredom in learning spaces challenges the pervasive neoliberal discourse in education, reshaping the idea of a classroom. As Cristina Vintimilla (2014) writes:

In early childhood settings, educators often arrange materials in different areas of the classroom for children to explore. I have noticed how children will stay in these areas, or with the materials, until they are bored or they have decided the activity is not fun anymore. Then they are ready to jump to the next area or table. I suspect the presumption behind such classroom organization is that children can’t be engaged for long periods of time. (p. 81)

In this quote, Vintimilla highlights the role of the educator, in neoliberal discourse, to conduct boredom-free learning experiences and environments. As we encountered

charcoal and cardboard, we embraced boredom as a participant in our entanglement. As a participant, boredom brought risk, tension, and possibilities—and generated contemplation.

### **Tensions with Contemplation**

The moment of listening to the charcoal sounds alongside children provoked thinking about what it means to allow for moments without clear meaning. There was no way to predict movements within the encounters, and the resulting unpredictability allowed for new connections and other ways of thinking—charcoal and cardboard relations of sensorial intimacy with material members of the classroom. Indeterminacy created a space where interactions did not have a particular goal, beginning, or end and helped to dissuade centring and productivity discourses. The same indeterminacy that allowed for listening in the charcoal moment was paralleled with cardboard tubes as they sat with the light. The child could do “nothing” with the tubes but observe, turning nothing into something when contemplation was acknowledged as a way to participate in the encounter. Recognizing and sharing this moment with another without connecting to any outcome engaged contemplation in the entanglement.

Cardboard, an object so pervasive in everyday lives it often goes unnoticed, became a subject of contemplation. Living fast-paced lives in a consumer society striving for instant gratification can render such entanglements invisible. The invisibility comes from being so surrounded by a material that it is no longer seen. Cardboard is further made invisible by the human categorization of a material as a mostly disposable product for human benefit alone.

The constant need for gratification in ECE contexts does not allow for simple moments that address contemplation. Quiet observation is considered as passive or nonparticipative (Buitoni, 2006). Attuning closely and deeply with charcoal led to contemplation about sound, vibrations, and metallic tastes. Both charcoal and cardboard moved individual educators and researchers alike to contemplate collective implications with pedagogy and practice in early childhood education. In dialogue, contemplation stimulated new thoughts unrelated to a focus on children, play, development, and productivity. In dialogue, the presence of neoliberal discourse was spoken aloud and actively repositioned as one of many participants instead of dominant discourse.

The world that asks us to efficiently produce usable skills and products devalues contemplation. The gaps



of time between such productive moments are filled with fun, entertainment, and wonderings. In some charcoal/cardboard moments, contemplation moved the participants' thinking. Contemplation, in these examples, challenged productivity and a relentless drive for novelty, an undercurrent of consumer societies (Jackson, 2009; Moss, 2014). In asking questions about material choices, treatments, and relations, educators stepped away from needs for neoliberal productivity and considered entanglements with more-than-human worlds.

In thinking with boredom and indeterminacy, common worlds methods that "advocate for the pedagogical potential of the mundane and ordinary" (Taylor, 2013, p. 49) support grappling with the ordinariness of materials like charcoal and cardboard to understand what it means to be in a shared world. Common worlds methods go beyond trying to understand the contexts in which a material intra-acts, trying instead to actively include otherness and the participants that follow—such as boredom, tension, temporalities, risk, possibility, energies, sensations, ancestries, discourses, stories, light, indeterminacy, contemplation, and the odd human.

## Conclusion

Skills, novelty, and time are three ways neoliberal productivity can dominate early childhood. In our charcoal and cardboard inquiries, we disrupted these to reveal that indeterminacy can also be generative. In creating a space to attend to relations with charcoal, we focused on collective understandings of relations between spaces, senses, materials, and humans. These relations went beyond the individual self or identifiable, measurable skills to become states to consider and contemplate. Novelty and the unspoken need for the new that underscore early childhood education presented in parental concerns about boredom. With cardboard, negative connotations of boredom became not productive but a generative alternative of considering beauty and possibility. Cardboard became an opening to "We wonder..." statements of a more panoramic viewpoint to see bark, textures, and indefinable, wonder-full maybes. Time, a societal and education productivity dictator, was conceptualized differently with both charcoal and cardboard in moves away from linear models. In early childhood, time infuses and stresses dialogues, engagements, behaviours, and experiences into set segments, acting as the ultimate resource. With charcoal, time carried diminished power as educators focused on a material engagement, collapsing ideas of "What next?" thinking. Education behaviours around a

variety of materials as part of activities were lessened by the depth of relations with the single material. Without thinking about "What activities will we do this morning?" educators immersed themselves in charcoal fluidly without activity or the parameters of "morning." This fluid time opened to bark-forest time to think with material and place and contemplate the complexity of holes, rot, and others. Similarly, with charcoal educators, children and researchers alike lost track of time and collapsed time as a minute became an hour and vibrations provoked primal telegraph lines of pasts.

As authors what we propose with pedagogies of indeterminacy is an alternative narrative that challenges productivity logics. The nonlinearity and non-totalizable aspects within indeterminacy disrupt the logic based in what Peter Moss (2019) refers to as "prescription, predictability and regulation, with carefully calculated inputs and closely specified outputs [that] leave no space for the unexpected, surprising, for wonder and amazement" (p. 22). In thinking with common worlds, we actively embrace indeterminacy without a neoliberal productive end goal. Pacini-Ketchabaw et al. (2016) suggest that in a relational encounter connections happen tangentially and take many directions. With this onto-epistemological understanding of such encounters and the learnings with charcoal and cardboard, we see thoughts and questions, often without answers.

In considering climate change and the dominant productivity discourse in early childhood education, we need to consider the generative nature of boredom and contemplation in practice with common worlds thinking. We need to disrupt thinking that positions charcoal or cardboard as disposable materials for human need and think with them and our common world entanglements with a precarious planet. Thinking with common worlds is a political act in early childhood education that actively pushes back against neoliberal productivity models centred around human needs in favour of an alternative: collective thinking with more-than-human worlds.

The implications of these questions in anthropogenic times act as reminders of the benefits of thinking with lived experience rather than seeking concrete answers and lead to new questions: What role does pedagogy in early childhood contribute to new ways of thinking with the messy environments of our existence and practice? How can educators stay with the generative nature of trouble in rethinking practice? How do educators build alternative pedagogies into practice?

## References

- Barad, K. (2007). *Meeting the universe halfway*. Durham NC: Duke University Press.
- Buitoni, D. S. (2006). *De volta ao quintal mágico: A educação infantil na Te-Arte*. São Paulo, Brazil: Editora Ágora.
- Carson, R., & Kelsh, N. (1998). *The sense of wonder*. New York, NY: HarperCollins.
- Dahlberg, G., & Moss, P. (2004). *Ethics and politics in early childhood education*. London, UK: Routledge.
- Dahlberg, G., Moss, P., & Pence, A. (2013). *Beyond quality in early childhood education and care: Languages of evaluation* (3rd ed.). New York, NY: Routledge.
- Davies, B. (2014). *Listening to children: Being and becoming*. New York, NY: Routledge.
- Farquhar, S. (2016). Time in early childhood: Creative possibilities with different conceptions of time. *Contemporary Issues in Early Childhood*, 17(4), 409–420. doi:10.1177/1463949116677925
- Halfon, S. H. A. N. I., & Langford, R. (2015). Developing and supporting a high quality child care workforce in Canada. *Our Schools, Ourselves. Summer*, 131-144.
- Higgins, V., & Larner, W. (Eds.). (2017). *Assembling neoliberalism: Expertise, practices, subjects*. New York, NY: Springer.
- Hodgins, B. D. (Ed.). (2019). *Feminist research for 21st-century childhoods*. New York, NY: Bloomsbury.
- Jackson, T. (2009). *Prosperity without growth?* Retrieved from [http://www.sd-commission.org.uk/data/files/publications/prosperity\\_without\\_growth\\_report.pdf](http://www.sd-commission.org.uk/data/files/publications/prosperity_without_growth_report.pdf)
- Johnston, L. (2019). The (not) good educator: Reconceptualizing the image of the educator. *eceLink*, 3(2), 40–54. Retrieved from [https://d3n8a8pro7vhm.cloudfront.net/aeceo/mailings/1631/attachments/original/eceLINK\\_Fall2019\\_Finalweb.pdf?1570820616](https://d3n8a8pro7vhm.cloudfront.net/aeceo/mailings/1631/attachments/original/eceLINK_Fall2019_Finalweb.pdf?1570820616)
- Latour, B. (1993). *We have never been modern* (C. Porter, Trans.). New York, NY: Harvester Wheatsheaf.
- Lenz Taguchi, H. (2010). *Going beyond the theory/practice divide in early childhood education: Introducing an intra-active pedagogy*. New York, NY: Routledge.
- Moss, P. (2014). *Transformative change and real utopias in early childhood education*. New York, NY: Routledge.
- Moss, P. (2019). *Alternative narratives in early childhood: An introduction for students and practitioners*. New York, NY: Routledge.
- Ontario Ministry of Education. (2014). *How does learning happen? Ontario's pedagogy for the early years*. Toronto, ON: Queen's Printer for Ontario.
- Pacini-Ketchabaw, V., Kind, S., & Kocher, L. (2016). *Encounters with materials in early childhood education*. New York, NY: Routledge.
- Plumwood, V. (1993). The politics of reason: Towards a feminist logic. *Australasian Journal of Philosophy*, 71(4), 436–462. doi:10.1080/00048409312345432
- Ritchie, J. (2016). Qualities for early childhood care and education in an age of increasing superdiversity and decreasing biodiversity. *Contemporary Issues in Early Childhood*, 17(1), 78–91.
- Rooney, T. (2019). Weathering time: Walking with young children in a changing climate. *Children's Geographies*, 17(2), 177–189.
- Rushton, S., Juola-Rushton, A., & Larkin, E. (2010). Neuroscience, play and early childhood education: Connections, implications, and assessment. *Early Childhood Education Journal*, 37(5), 351–361. doi:10.1007/s10643-009-0359-3
- Smith, L. T., Tuck, E., & Yang, K. W. (Eds.). (2018). *Indigenous and decolonizing studies in education: Mapping the long view*. Boca Raton, FL: Routledge Taylor & Francis.
- Stengers, I. (2015). *In catastrophic times: Resisting the coming barbarism*: Open Humanities Press.
- Stewart, K. (2007). *Ordinary affects*. Durham, NC: Duke University Press.
- Stewart, K. (2011). Atmospheric Attunements. *Environment and Planning D: Society and Space*, 29(3), 445-453. doi:10.1068/d9109
- Taylor, A. (2013). *Reconfiguring the natures of childhood*. New York, NY: Routledge.
- Taylor, A. (2017). Beyond stewardship: Common world pedagogies for the Anthropocene. *Environmental Education Research*, 23(10), 1448–1461. doi:10.1080/13504622.2017.1325452
- Taylor, A. (2018). Situated and entangled childhoods: Imagining and materializing children's common world relations. In M. Bloch, B. Swadener, & G. S. Cannella (Eds.), *Reconceptualizing early childhood education and care—A reader: Critical questions, new imaginaries, and social activism* (pp. 205–214). New York, NY: Peter Lang.
- Taylor, A., & Pacini-Ketchabaw, V. (2015). Learning with children, ants, and worms in the Anthropocene: Towards a common world pedagogy of multispecies vulnerability. *Pedagogy, Culture, & Society*, 23(4), 507–529. doi:10.1080/14681366.2015.1039050
- Vintimilla, C. (2014). Neoliberal fun and happiness in early childhood education. *Canadian Children*, 39(1), 79–87.